

**Claims.**

We claim:

1. A refractory comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
- 5 2. The refractory of claim 1, comprising 0.9% to 2.0%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
3. The refractory of claim 2, comprising 0.95% to 1.85%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up  
10 to 0.25%  $\text{TiO}_2$ .
4. The refractory of claims 1 to 3, comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.4% to 8.8%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
5. The refractory of claim 4, comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 6% to 8%  $\text{SiO}_2$ , 86% to 95%  
15  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
6. The refractory of claims 1 to 5, comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.4% to 8.8%  $\text{SiO}_2$ , 88% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
- 20 7. The refractory of claim 6, comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 89.3% to 93.6%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
8. The refractory of claims 1 to 7, comprising 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.3% to 0.9%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$   
25 and up to 0.25%  $\text{TiO}_2$ .
9. The refractory of claims 1 to 8, consisting essentially of 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.4%  $\text{CaO}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
10. The refractory of claims 1 to 8, consisting essentially of 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to  
30 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.1%  $\text{FeO}_3$  and up to 0.25%  $\text{TiO}_2$ .
11. The refractory of claims 1 to 8, consisting essentially of 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to 10.0%  $\text{SiO}_2$ , 86% to 95%  $\text{ZrO}_2$ , 0.1% to 1.2%  $\text{B}_2\text{O}_3$ , up to 0.04%  $\text{Na}_2\text{O}$ , up to 0.4%  $\text{CaO}$  and up to 0.25%  $\text{TiO}_2$ .
- 35 12. The refractory of claims 1 to 8, consisting essentially of 0.9% to 2.5%  $\text{Al}_2\text{O}_3$ , 4.0% to

10.0% SiO<sub>2</sub>, 86% to 95% ZrO<sub>2</sub>, 0.1% to 1.2% B<sub>2</sub>O<sub>3</sub>, up to 0.04% Na<sub>2</sub>O, up to 0.4% CaO, up to 0.1% FeO<sub>3</sub> and up to 0.25% TiO<sub>2</sub>.

13. The refractory of claim 1, consisting essentially of 0.95% to 1.85% Al<sub>2</sub>O<sub>3</sub>, 4.4% to 8.8% SiO<sub>2</sub>, 89.3% to 93.6% ZrO<sub>2</sub>, 0.3% to 0.9% B<sub>2</sub>O<sub>3</sub>, up to 0.04% Na<sub>2</sub>O, up to 0.4% CaO, up to 0.1% FeO<sub>3</sub> and up to 0.25% TiO<sub>2</sub>.

14. The refractory of claim 1, wherein the refractory has an electrical resistance of at least 80 ohm-cm at 1625°C.

15. The refractory of claim 1, wherein the refractory has an electrical resistance of at least 100 ohm-cm at 1625°C.

16. The refractory of claim 1, wherein the refractory has an electrical resistance of at least 130 ohm-cm at 1625°C.

17. The refractory of claim 1, wherein the refractory has an electrical resistance of at least 250 ohm-cm at 1625°C.

18. The refractory of claim 1, wherein the refractory has an electrical resistance of at least 300 ohm-cm at 1625°C.

19. A refractory comprising 0.95% to 1.85% Al<sub>2</sub>O<sub>3</sub>, 4.4% to 8.8% SiO<sub>2</sub>, 89.3% to 93.6% ZrO<sub>2</sub>, 0.3% to 0.9% B<sub>2</sub>O<sub>3</sub>, up to 0.04% Na<sub>2</sub>O, up to 0.4% CaO, up to 0.1% FeO<sub>3</sub> and up to 0.25% TiO<sub>2</sub>.

20. The refractory of claim 19, consisting essentially of 0.96% to 1.1% Al<sub>2</sub>O<sub>3</sub>, 6.6% to 8.8% SiO<sub>2</sub>, 89.3% to 91.2% ZrO<sub>2</sub>, 0.6% to 0.9% B<sub>2</sub>O<sub>3</sub>, up to 0.02% Na<sub>2</sub>O, up to 0.1% CaO, up to 0.1% FeO<sub>3</sub> and up to 0.1% TiO<sub>2</sub>.

21. The refractory of claim 20, consisting essentially of 0.96% to 1.1% Al<sub>2</sub>O<sub>3</sub>, 6.6% to 8.8% SiO<sub>2</sub>, 89.3% to 91.2% ZrO<sub>2</sub>, 0.6% to 0.9% B<sub>2</sub>O<sub>3</sub>, up to 0.1% CaO, up to 0.1% FeO<sub>3</sub> and up to 0.1% TiO<sub>2</sub>.

22. The refractory of claim 19, wherein the refractory has an electrical resistance of at least 80 ohm-cm at 1625°C.

23. The refractory of claim 19, wherein the refractory has an electrical resistance of at least 100 ohm-cm at 1625°C.

24. The refractory of claim 19, wherein the refractory has an electrical resistance of at least 130 ohm-cm at 1625°C.

25. The refractory of claim 19, wherein the refractory has an electrical resistance of at least 250 ohm-cm at 1625°C.

26. The refractory of claim 21, wherein the refractory has an electrical resistance of at least 300 ohm-cm at 1625°C.